

desire to be limited only by the scope of the following claims and equivalents thereof.

We claim:

1. A filled synthetic turf comprising:
  - a foundation;
  - a backing residing on the foundation;
  - a plurality of grass-like pile filaments secured to the backing and
- 5 extending generally upwardly therefrom; and
  - a particulate fill material residing on the backing to a desired height,
- the pile filaments extending above the fill material, the fill material including,
  - a first lower layer of gravel located on the backing and a second
- 10 upper layer of resilient particles, wherein the first lower layer provides
  - weight for holding the backing and the second upper layer provides
- resiliency for the synthetic turf.
2. The filled synthetic turf of claim 1 wherein the pile filaments
- comprise synthetic ribbons of selected length.
3. The filled synthetic turf of claim 1 wherein the first lower layer
- comprises pea gravel.
4. The filled synthetic turf of claim 1 wherein the second upper layer
- comprises synthetic particles.
5. The filled synthetic turf of claim 4 wherein the synthetic particles are
- rubber.

6. The filled synthetic turf of claim 1 wherein the height of the first lower layer is about equal to the height of the second upper layer.

7. The filled synthetic turf of claim 1 and further comprising:  
a subsurface residing between the foundation and the backing, the subsurface including:

5 a subsurface backing with a plurality of subsurface pile  
filaments extending upwardly therefrom to a desired height;  
a subsurface fill material residing on the subsurface backing to  
a desired vertical level relative to the desired height of the subsurface  
pile filaments including at least some resilient particles; and  
10 a polymeric coating applied to the subsurface fill material and  
the subsurface pile filaments to hold the subsurface fill material in  
place.

8. The filled synthetic turf of claim 7 wherein the composition of the subsurface fill material and the desired height of the subsurface pile filaments are selected to achieve a desired degree of shock absorption for the subsurface and for the synthetic turf located thereabove.

9. The filled synthetic turf of claim 7 wherein subsurface fill material includes gravel in combination with the resilient particles.

10. The filled synthetic turf of claim 7 wherein the subsurface further comprises:

tubing residing within the subsurface fill material above the subsurface backing and below the tops of the subsurface pile filaments, the  
5 tubing adapted to be operatively connected to a pump to convey fluid within the tubing to selectively heat or cool the subsurface, to thereby heat or cool the filled synthetic turf.

11. The filled synthetic turf of claim 1 wherein said backing residing on the foundation is water permeable.

12. A filled synthetic turf comprising:
- a foundation;
  - a drainage member residing on the foundation;
  - a water permeable backing residing on the drainage member;
  - 5 a plurality of grass-like pile filaments secured to the backing and extending generally upwardly therefrom; and
  - a particulate fill material residing on the backing to a desired height, the pile filaments extending above the fill material, the fill material including,
    - a first lower layer of gravel located on the backing and a
    - 10 second upper layer of resilient particles, wherein the first lower layer provides weight for holding the backing and the second upper layer provides resiliency for the synthetic turf.
13. The filled synthetic turf of claim 12 wherein said pile filaments are grass-like fibers.
14. The filled synthetic turf of claim 12 wherein said gravel comprises particles having a diameter greater than 2 millimeters.

15.           A filled synthetic turf comprising:
- a foundation;
  - a backing residing on the foundation;
  - a plurality of grass-like pile filaments secured to the backing and
- 5   extending generally upwardly therefrom; and
- a particulate fill material residing on the backing to a desired height,
- the pile filaments extending above the fill material, the fill material including gravel and resilient particles, wherein the gravel provides weight for holding the backing in place and the resilient particles provide resiliency for
- 10   the synthetic turf.

16. A method of constructing a filled synthetic turf on a foundation,  
comprising:

placing a backing on the foundation, a plurality of pile filaments being  
secured to the backing and extending generally upwardly therefrom;

- 5 filling a particulate fill material on the backing to a desired height, the pile  
filaments extending above the fill material, the fill material including a first  
lower layer of gravel located on the backing and a second upper layer of  
resilient particles, wherein the first lower layer provides weight for holding  
the backing on the foundation and the second upper layer provides  
10 resiliency for the synthetic turf.

17. A method of constructing a filled synthetic turf on a foundation,  
comprising:

placing a drainage member on the foundation,

placing a water permeable backing upon the foundation, a plurality of

5 pile filaments being secured to the backing and extending generally  
upwardly therefrom;

filling a particulate fill material on the backing to a desired height, the  
pile filaments extending above the fill material, the fill material including a  
first lower layer of gravel located on the backing and a second upper layer

10 of resilient particles, wherein the first lower layer provides weight for  
holding the backing on the foundation and the second upper layer provides  
resiliency for the synthetic turf.



18. A method of constructing a filled synthetic turf on a foundation,  
comprising:

placing a drainage member on the foundation,

placing a water permeable backing upon the foundation, a plurality of

5 pile filaments being secured to the backing and extending generally  
upwardly therefrom;

filling a particulate fill material on the backing to a desired height, the  
pile filaments extending above the fill material, the fill material including a  
first lower layer of gravel located on the backing and a second upper layer  
10 of resilient particles, wherein the first lower layer provides weight for  
holding the backing on the foundation and the second upper layer provides  
resiliency for the synthetic turf.

19. An athletic surface comprising:
- a foundation;
  - a subsurface layer supported by the foundation and a surface layer comprising a filled synthetic turf supported by the subsurface layer, the
- 5 subsurface layer comprising
- a subsurface flexible backing with a plurality of grass-like subsurface pile filaments extending generally upwardly therefrom to a desired height;
  - a subsurface fill material residing on the subsurface backing, the subsurface fill material including at least some rubber particles, wherein the
- 10 composition of the subsurface fill material and the desired height of the subsurface pile filaments are selected to achieve a desired degree of shock absorption for the surface; and
- a tubing circuit residing within the subsurface fill material above the subsurface backing and below the tops of the subsurface pile filaments, the
- 15 tubing circuit adapted to convey fluid within the subsurface tubing circuit, thereby to selectively heat or cool the subsurface layer.
20. The athletic surface of claim 19 wherein the filled synthetic turf of the surface layer comprises a surface backing residing on the subsurface layer and a plurality of pile filaments secured to the surface backing and extending generally upwardly therefrom, and a particulate surface fill
- 5 material residing on the surface backing to a desired height, the surface pile filaments extending above the surface fill material.

21. The athletic surface of claim 19 and further comprising,  
a binder holding the subsurface fill material and the subsurface pile filaments together in place and holding the subsurface fill material and the subsurface pile filaments to the subsurface backing.
22. The athletic surface of claim 21 wherein the binder is a polymeric binder.
23. The athletic surface of claim 20 wherein the surface fill material includes at least one layer of gravel located on the surface backing.
24. The athletic surface of claim 19 wherein the foundation includes at least one layer of drainage members.

25. An athletic surface comprising:
- a foundation;
  - a drainage member residing on the foundation;
  - a subsurface layer supported by the foundation and a surface layer
- 5 comprising a filled synthetic turf supported by the subsurface layer, the subsurface layer comprising
- a subsurface flexible backing with a plurality of grass-like subsurface pile filaments extending generally upwardly therefrom to a desired height;
  - a subsurface fill material residing on the subsurface backing, the
- 10 subsurface fill material including at least some rubber particles, wherein the composition of the subsurface fill material and the desired height of the subsurface pile filaments are selected to achieve a desired degree of shock absorption for the surface.
26. The athletic surface of claim 25 wherein the surface fill material includes at least one layer of gravel located on the surface backing.
27. The athletic surface of claim 25 wherein the subsurface fill material includes at least one layer of gravel located on the subsurface backing.